Upwork

REPORT

Overboard on Offshore Fears

In 2007 an economist predicted U.S. service sector jobs were at high risk of being offshored. Data now shows that instead they are going remote.

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Executive Summary

Advancing technology is unlocking great potential in remote work opportunities by making it increasingly easy for work that used to be done in person to now be done remotely. Yet these changes have led some researchers to worry about the offshoring of U.S. jobs. In one influential estimate from 2007, economist Alan Blinder projected that a quarter or more of U.S. jobs were at risk of being offshored.

In this report, we take a look at the data from the decade-plus since this warning was issued and find that the techno-pessimism was misplaced. Instead of being offshored, the types of work predicted to be at risk of offshoring are increasingly being performed remotely by workers within the U.S. While technology may be giving firms the choice of hiring workers from around the globe, this is not translating to job loss. Instead, it's leading to more U.S. workers enjoying the greater freedom, flexibility, and shorter commutes of remote work.

This analysis investigates the growth of remote work in the U.S. using Census Bureau data, unique surveys and data from Upwork, the largest online work website.

The key results are as follows:

- Contrary to popular predictions made in 2007, offshoring risk is not related to job loss for hundreds of occupations.
- Instead, those jobs predicted as "at risk" of being offshored are significantly more remote work based today.
- Data from Upwork shows that U.S. knowledge workers retain a competitive advantage even in a global marketplace, and are in demand from both U.S. businesses and businesses around the world.
- Young business owners and hiring managers are more comfortable with remote work, and younger workers are more likely to want to work remotely, which suggests the remote work trend will continue to grow based on demographic change alone.
- Instead of focusing on how demand might shift overseas, research should consider how remote work could help shift demand within the U.S. to lower cost of living areas that are currently lacking in economic opportunity.

Introduction

Technology has made it increasingly feasible for companies to hire workers remotely for work that used to be done in person. On the hardware side, computers are faster and cheaper, and broadband internet is now widely available. Advances in video chat technology, cloud-based software, and desktop virtualization have also made remote collaboration easier than ever.

Yet as researchers have looked to the future to project what this trend means for U.S. workers, there has been a tendency to predict that a large share of U.S. jobs would be offshored. **Over a decade ago, in one of the most influential studies on this topic, economist Alan Blinder warned that 29% of jobs were potentially offshorable.**[1] His research generated a variety of media coverage. As the Wall Street Journal noted at the time:

> Alan, because of his stature, provided a degree of legitimacy to what many of us had come to feel anecdotally—that the anxiety over outsourcing and offshoring was a far larger phenomenon than traditional economic analysis was showing.

While the movement of *manufacturing* jobs overseas was nothing new, Blinder's warning was largely directed at the rest of the workforce, cautioning that "tens of millions of additional American workers will start to experience an element of job insecurity that has heretofore been reserved for manufacturing workers."

Though plenty of economists have disagreed with dire warnings about offshoring, one assumption that has gone largely unchallenged is that the primary way firms will choose to embrace these new technologies is by hiring overseas. An equally plausible—but rarely discussed—theory is that instead of first sending labor demand overseas, the transition to greater remote work would benefit us at home as firms hire U.S.-based remote workers.

By contrast, what we find in this report is that, now that we have the data to assess what actually happened, we can see that the jobs predicted to be most at risk do not show a relationship to increased job loss. Instead, they do show a growing relationship to remote work**.**

This emerging trend has dramatic implications for the labor market and represents a much more optimistic view than the fears of offshoring that many commentators have historically focused on. While Blinder and others were right that technology will allow more work to be done remotely, they were wrong in focusing on offshoring. By enabling more remote work opportunities, technological advancement provides

[1] "How Many U.S. Jobs Might Be Offshorable?" CEPS working paper no. 142, March 2007.

greater freedom, more flexibility, shorter commutes, and the potential to redistribute those opportunities within the U.S.

Offshoring Risk *Did Not* Lead to Job Loss

Economists define offshoring as the relocation of domestic jobs to another country. This can be done within firms (as in Apple moves a factory from the U.S. to China) or between firms (as in Apple replaces U.S.-based customer service workers by hiring a call-center services company in India).

Over the last decade or so, as remote work technology has improved, various attempts have been made to quantify the risk of offshoring. Estimates of the share of jobs at risk of offshoring vary but have generally ranged from around 10% to 40%. In his prominent 2007 study, Blinder estimated that between 22% and 29% of U.S. jobs were at high risk of being offshored.

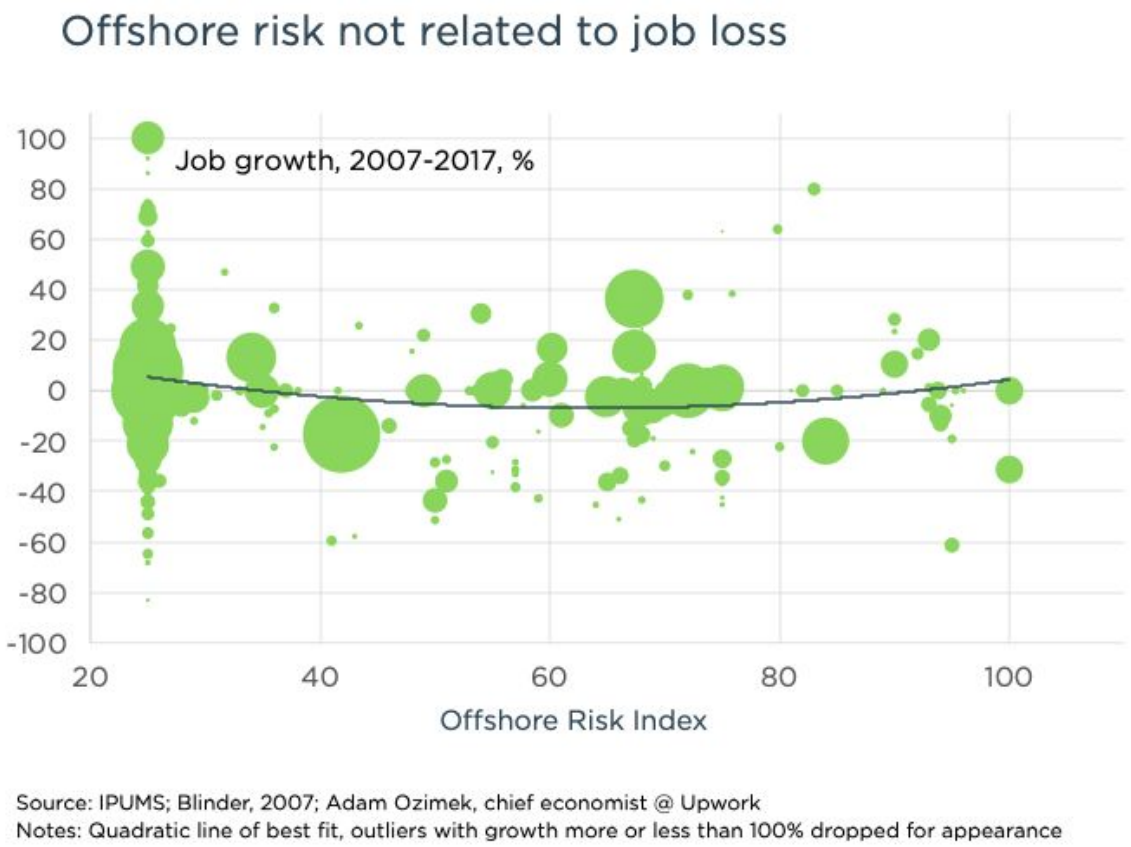
Blinder and others have based this risk on two key conceptual questions:

1) Must the work be done at a particular location?
2) Will quality of the good or service be degraded by delivering it remotely?

For example, the job of a janitor must be done at the location to be cleaned, and thus is not vulnerable to offshoring. Childcare and farm workers are other examples of non-offshorable jobs. At the other extreme, data entry work can clearly be done remotely with little to no loss of data quality. Programmers, writers, and call-center workers are other examples of jobs with a high offshorability.

Blinder's 2007 study is useful because of its influence—spurring a large discussion among media, economists, and many others—and because it produced an index of offshoring risk for hundreds of occupations. With the above conceptual questions in mind and detailed data about the kind of tasks and work environment an occupation entails, **Blinder ranked occupations from 0 to 100 on the risk of being offshored, with 100 being the highest risk.**

More than a decade later, we can look back and see whether a risk of offshoring translated to job loss as many feared. To do this, we utilize Blinder's occupational offshoring risk scores combined with data on occupational job growth from the American Community Survey for a total of 414 occupations that could be matched across the datasets. Based upon this analysis, **there is no relationship between job growth and offshoring risk.** Jobs that were deemed most offshoreable in 2007 have grown no more or less fast over the last decade than those that were least offshorable.



Regression analysis confirms the lack of a statistically significant relationship across a variety of models.[2] While Blinder warned that the Bureau of Labor Statistics (BLS) should consider offshoring risk in its projections of future job growth, there appears to be little relationship.

[2] Models include weighted by 2007 occupation and unweighted. Risk scores below 25 are truncated at 25 due to Blinder not coding these and simply considering them "unoffshorable." Models excluding those truncated observations are included as well. Finally, multiple occupations in Blinder's data were sometimes matched to a single occupation in the ACS data due to the use of different occupation codes. Matching was done using a crosswalk of SOC code to ACS occupation code produced by the BLS, but some occupations were weighted averaged. As a robustness test, any occupations that were averaged and did not have the same offshoring risk score were dropped in one model. Across all models results remain statistically insignificant.

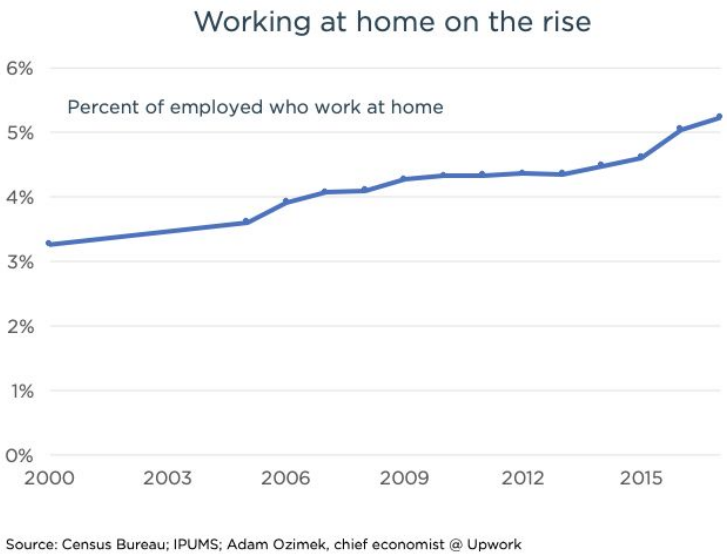
Regression Results: Occupation Job Growth, 2007-2017

	Model 1	Model 2	Model 3	Model 4	Model 5
Offshoring risk	-0.063	-0.122	0.056	-0.103	-0.083
p-value	0.439	0.193	0.772	0.332	0.611
Sample	414	414	169	373	128
Adjusted r-squares	-0.001	0.008	-0.005	0.005	-0.006
Employment weighted		X	X	X	X
Drop < 25 scores			X		X
Drop averaged scores				X	X

Source: Census Bureau; IPUMS; Blinder, 2007; Adam Ozimek, chief economist @ Upwork

The fact that jobs predicated as at a high risk of offshoring did not suffer from lower job growth raises the question of whether technology has affected these occupations at all. However, the offshoring literature has a blindspot in its focus on offshoring as the primary way that firms will respond to improvements in communications technology. Researchers attempted to ascertain which jobs are easiest to do remotely but then focused almost exclusively on the risk they would be done offshore. Instead, it is worth looking at the effect of technology on the odds of working remotely for those the U.S.

While the Census Bureau does not directly ask about remote work, they do ask whether those with a job work at home, which represents a reasonable proxy for remote work. This data suggests a steady increase in remote work, as the share of employed individuals who work at home has risen from 3.3% in 2000 to 5.2% in 2017.



While the rise of remote work is clear in the Census data, it understates the predominance of remote work. One reason is that the Census does not include people who only do some work remotely. New data from the survey Freelancing in America: 2019 (FIA), co-commissioned by Upwork and Freelancers Union and being released later this fall, shows that while 9.5% of workers do all of their work remotely, another 26.6% do some but not all work remotely. In addition, the Census also misses remote workers who don't work from home. From FIA 2019, we can see that many remote workers do their jobs outside of the home, either in coworking spaces, coffee shops, or a private office. Specifically, the FIA 2019 report shows only 5.1% of the workforce is all remote and works from home, a number that is consistent with the 5.2% Census estimates. Including those who do occasional remote work and those who work outside of their homes, however, more than a third of the workforce engages in remote work.

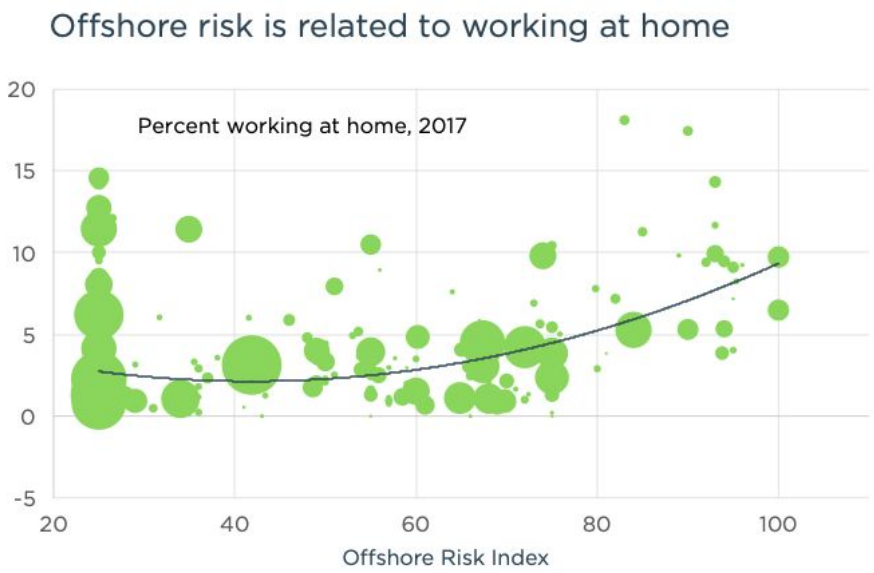
Freelancing in America 2019: What proportion of your work is done remotely?

	Share of workers
None	63.8%
A little of my work	8.5%
Some of my work	10.8%
Most of my work	7.3%
All of my work	9.5%

Source: Freelancing in America 2019; Adam Ozimek, chief economist @ Upwork

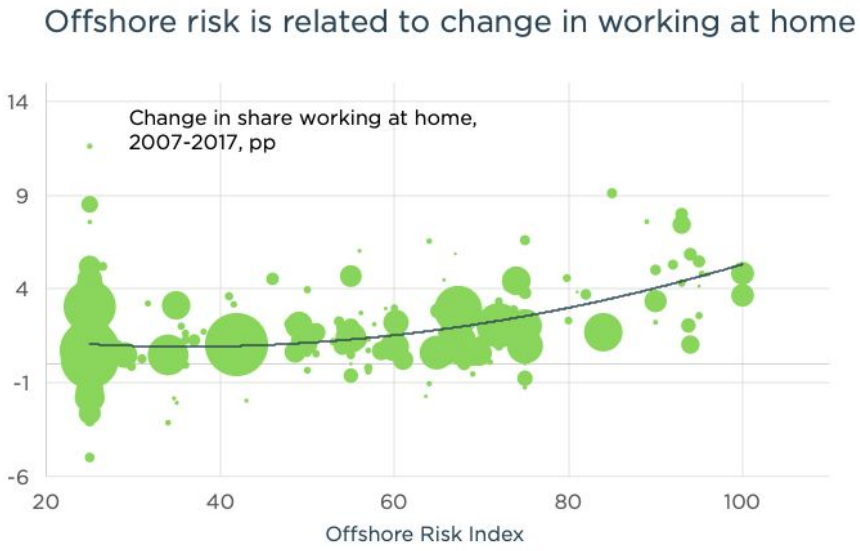
While the Census data is closer to a lower bound on the share of workers who are remote, it is nevertheless useful because it allows us to track the share working at home over time for a detailed list of occupations. Importantly, we can match these occupations to Blinder's offshoring risk data from 2007.

In 2017, the share working from home was significantly higher for occupations ranked by Blinder as being at high risk of offshoring in 2007. In other words, **while those jobs predicted as at risk of offshoring have not grown more slowly, significantly more of these jobs are performed remotely today.**



Source: IPUMS; Blinder, 2007; Adam Ozimek, chief economist @ Upwork
Notes: Quadratic line of best fit, outliers dropped for appearance

What's more, looking over the past decade, we can see that the share who work at home has increased most in those occupations with the highest offshoring risk.



Source: IPUMS; Blinder, 2007; Adam Ozimek, chief economist @ Upwork
Notes: Quadratic line of best fit, outliers dropped for appearance

Regression analysis shows that the relationship between offshoring risk measured in 2007 and growth in the share working from home over the last decade is highly statistically significant across a variety of models.

Regression Results: Change in % working at home by occupation, 2007-2017

	Model 1	Model 2	Model 3	Model 4	Model 5
Offshoring risk	0.033	0.028	0.039	0.032	0.050
p-value	0.000	0.000	0.000	0.000	0.000
Sample	414	414	169	373	128
Adjusted r-squares	0.102	0.131	0.130	0.150	0.159
Employment weighted		X	X	X	X
Drop < 25 scores			X		X
Drop averaged scores				X	X

Source: Census Bureau; IPUMS; Blinder, 2007; Adam Ozimek, chief economist @ Upwork

The Competitive Advantage of U.S. Knowledge Workers

So far, U.S. firms have largely responded to the improvements in internet and communications technology by hiring more remote workers in the U.S. rather than offshoring. However, one might wonder whether the rise of remote work nevertheless foretells of a future where U.S. workers eventually struggle to compete globally. One way to preview this future is to examine data from Upwork.

Jobs posted on Upwork are remote, and clients have the ability to engage professionals from all over the world. Upwork provides both clients and freelancers a variety of signals that reduce the uncertainty that often comes with hiring abroad. Clients can see a freelancer's Job Success Score (an indication of client satisfaction on completed projects based on client feedback) and relevant skills, for example; while freelancers can see a client's rating and and have confidence they'll receive payment due to Upwork's escrow services and payment protection programs.

Yet despite the availability of global talent, U.S.-based clients still engage more freelancers from the U.S. than any other country. In other words, faced with the

choice of talented remote workers from countries all over the world on a secure and trustworthy platform, the number one country U.S. clients hire from on Upwork is the U.S.

One reason U.S. freelancers have an edge with U.S. clients is that many clients see having a shared culture and language to be a competitive advantage. However, U.S. freelancers are broadly popular, as they are also among the most frequently hired for non-U.S. clients. For example, global clients over the last five years have hired around as many freelancers from the U.S. as they have from India despite India's overall population being four times larger.

This is because the U.S. has a highly-skilled workforce that is, based on output per hour worked, among the most productive in the world.[3] It is unsurprising that skilled U.S. knowledge workers are therefore able to thrive in a global market. This means that offshoring is a two-way street. Even if all jobs were fully remote and workers competed on a global basis, those who live in one of the most productive economies in the world would maintain comparative advantages in some areas.

In addition, the nature of skilled knowledge work also plays a role. The globalization of manufacturing proceeded rapidly and left many workers and firms in the U.S. at a competitive disadvantage. One key factor in the speed and severity of the decline was that the process was driven in large part by cost minimization. In contrast, labor quality will play a greater role in knowledge work where the product is less of a commodity.

Remote Work is an Opportunity for Struggling Places

Altogether, the rise of remote work and willingness by firms to benefit from remote opportunities should be seen as a positive development for U.S. workers. As a result, **instead of focusing on how demand might shift overseas, research should consider how remote work could help shift demand within the U.S. to low cost of living areas that are currently lacking in economic opportunity.**

Today, agglomeration economies are an important contributor to regional economic inequality. To have access to the best jobs often means living and working in a few high-cost, highly-productive, dense metro areas. The growth of remote work has the potential to provide workers across the U.S. more access to these jobs. Workers in struggling places have the same linguistic, cultural, currency, and educational advantages that help U.S. freelancers compete in the global marketplace. Yet they have a lower cost of living that helps them compete with U.S. workers in the most expensive cities.

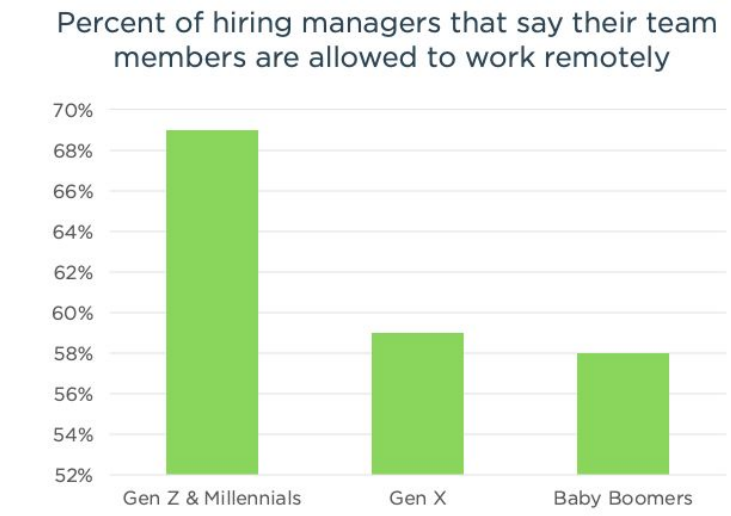
[3] The U.S. ranks near the top for PPP adjusted GDP per hour worked according to OECD data https://data.oecd.org/chart/5CFx

Indeed, previous research from economist Paul Oyer and Upwork has shown that freelancers are, by and large, located in lower cost of living places in the U.S. than clients are. The trend is just beginning, however, and while freelancers are located in lower cost of living and lower income places than the firms that hire them, they are not yet clustered in the lowest cost of living places in the U.S.

Remote Work Will Continue to Grow

The good news is that remote work is likely to continue to rise in the U.S. The continued improvement in internet and communications technology is one reason—including the rollout of the much faster 5G wireless networks. However, even given current technologies, the changing demographics of management, business owners, and employees will lead to greater remote work thanks to younger generations' greater levels of comfort with it.

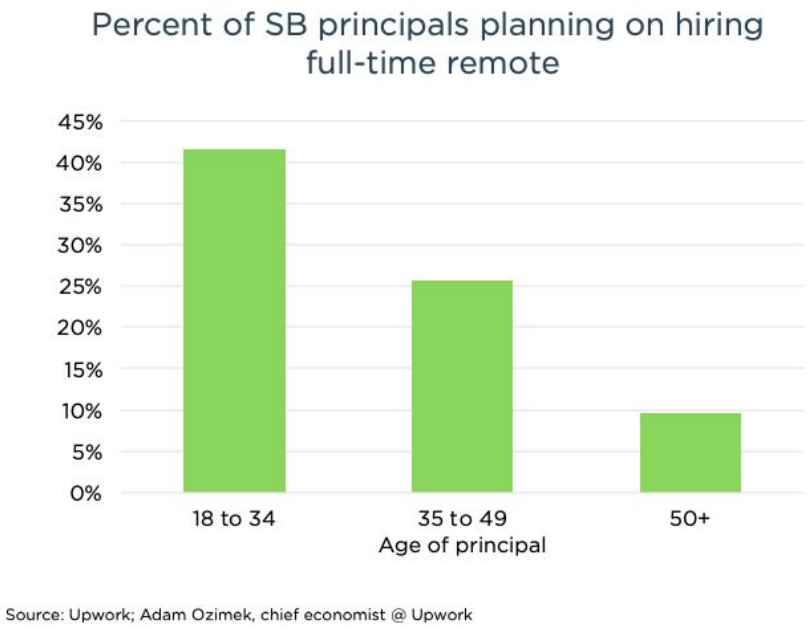
Based on interviews with 1,000 U.S. hiring managers, Upwork's Future Workforce Report (FWR) is one useful data source. A key finding of this survey shows that younger hiring managers are far more likely to allow their teams to work remotely.



Source: Future of Workforce; Adam Ozimek, chief economist @ Upwork

One caveat to this analysis is that younger hiring managers may work for different companies than older hiring managers—perhaps at newer, smaller companies, in emerging industries—and that these differences (not their age) explain their openness to remote work.

Using another Upwork survey based on 500 small business owners provides more rigorous evidence of a generational gap. The survey asked 500 principals whether they were planning on hiring full-time remote workers over the next year. The results are consistent with the FWR data and suggest that younger generations are more comfortable hiring remotely.



Source: Upwork; Adam Ozimek, chief economist @ Upwork

Using regression analysis on the individual responses, we can help rule out a variety of other firm-based explanations for these generational differences. The models show that younger generations are more likely to support remote work even after controlling for whether the firm is growing, the size of the firm, the age of the company, and the industry or state where the firm is located. In short, **younger business owners are more comfortable with remote work.** Compared to business owners age 50 and up, principals ages 18 to 34 are between 13 and 15 percentage points more likely to plan on hiring remotely over the next year.

Regression models: effect of principal and firm Characteristics on odds of hiring remote

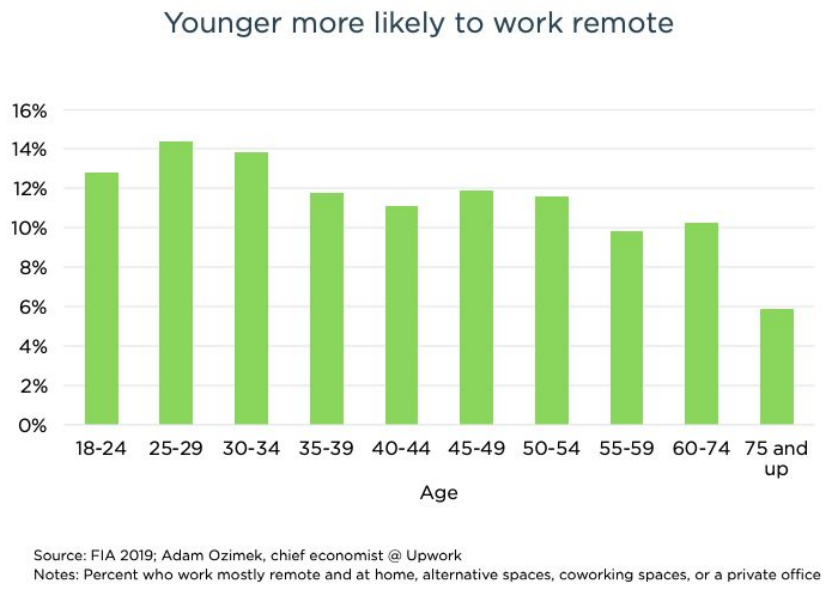
Variable	Base Model	State Controls	Industry Controls
Age 50+	-0.13*	-0.15**	-0.13*
Age 35 to 49	-0.10*	-0.11*	-0.08
Headcount growing	0.21***	0.19***	0.20***
Log(employees)	0.03**	0.04**	0.04**
New company	0.32**	0.31**	0.38***
Sample	500	500	500
Adjusted r-squared	0.17	0.15	0.17

* p<0.05; ** p<0.01; *** p<0.001

Source: Census Bureau; IPUMS; Blinder, 2007; Adam Ozimek, chief economist @ Upwork

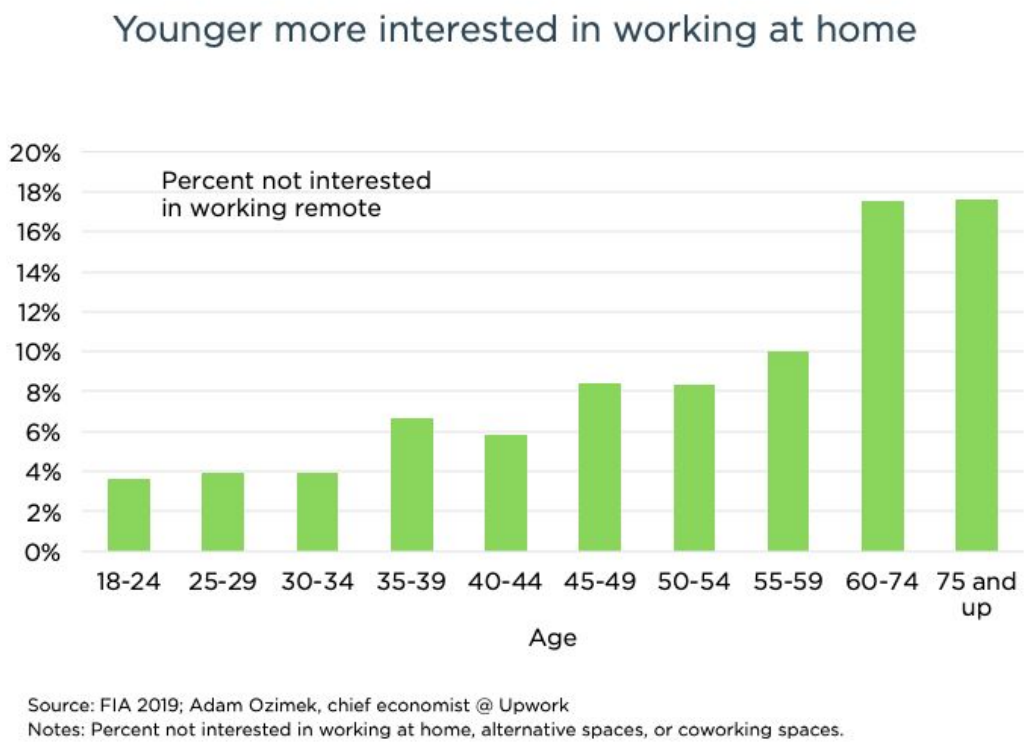
In addition, the data also suggests that younger workers are more likely to work at home. Using FIA 2019 survey data, we can examine the share of workers who work mostly or entirely remote.[4] The results indicate that younger workers are more likely to work remotely, with a peak at approximately age 25 to 29, and a significant decline at age 55 and up.

[4]This excludes those who report working mostly remote but indicate their primary work location is in a traditional employer office, traveling, or at a customer focused location.



Source: FIA 2019; Adam Ozimek, chief economist @ Upwork
Notes: Percent who work mostly remote and at home, alternative spaces, coworking spaces, or a private office

However, younger workers being more likely to work remotely does not tell us whether the driver is differences by age in employer preferences or employee preferences. Using FIA data, we can examine worker preferences using a question which asks how interested they would be in working in particular kinds of workspaces in the future. Again we see the oldest workers are least interested in working remotely. What's more, more than 95% of workers age 34 and under have some interest in working remotely in the future.



Overall Upwork's proprietary survey data provides a clear view into the preferences, beliefs, and behaviors of both employers and employees when it comes to working remotely. Across the board, younger cohorts have a stronger preference for working remotely. In addition, younger hiring managers and principals are more likely to hire remotely as well.

Altogether, **as younger generations of hiring managers and principals grow their share of the economy, the demand for remote workers will continue to grow, and younger generations of workers will gladly meet the demand.**

Conclusion

While researchers focusing on remote work have tended to focus on the risk that this technology will shift labor demand overseas through offshoring, more attention should be paid to the potential that it will likely help tip the scales away from the increasingly concentrated nature of economic opportunity within the U.S. The data over the last decade suggests that this is a far more likely outcome given the rise of domestic remote work, lack of job loss, and U.S firms' clear preference for U.S.-based workers. Even in a globally competitive marketplace, U.S. workers have a competitive advantage when it comes to skilled knowledge work.

Over the past few decades, the poorest places in the U.S. have stopped catching up with the richest. One reason is that skilled workers are flocking to rich, expensive cities, leaving other parts of the country lacking in human capital, entrepreneurs, and population growth. Remote work has the potential to rebalance opportunities by allowing workers the ability to find and contract with firms located in the most expensive cities without having to move there themselves.